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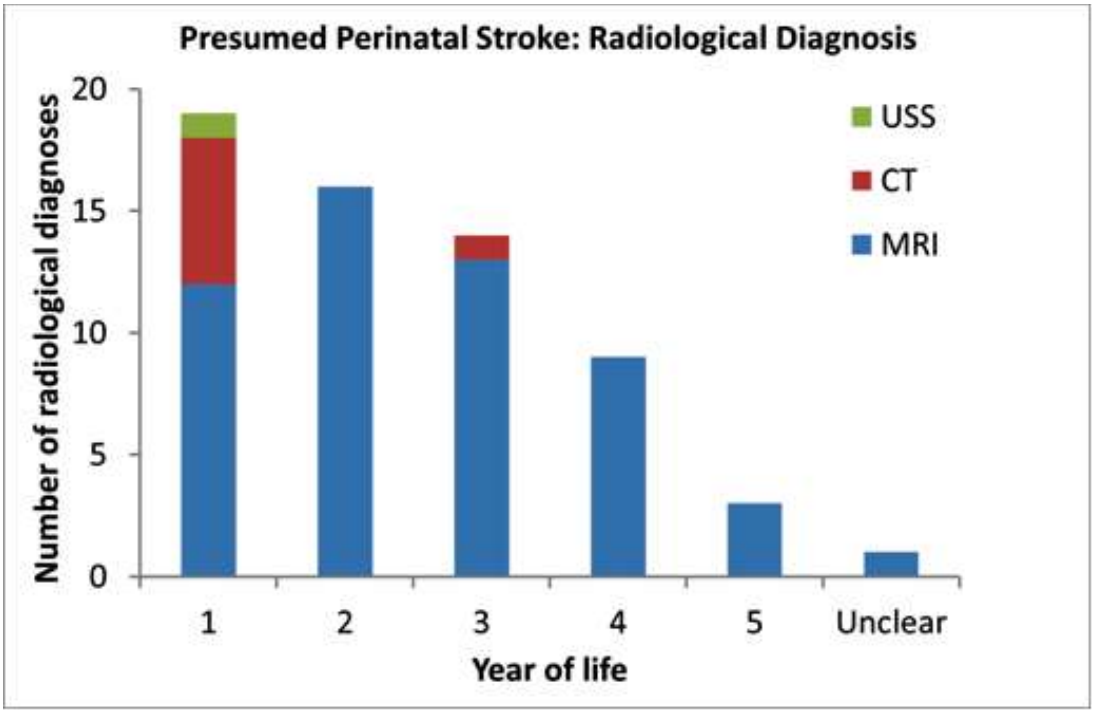
Case notes review of perinatal stroke in term and preterm infants in the Northern region over a 10 year period

Aims: Perinatal stroke (PNS) is caused by interrupted blood supply to part of the brain before birth or ≤ 28 days of life. Management recommendations are currently sparse. We aimed to review current practice in diagnosis and management of PNS within the Northern region.

Methods: Cases of PNS were identified from four neonatal intensive care units in the Northern region over a 10 year period (2000-2009) using ICD-10 codes. Data on presentation, management and outcome were collected.

Results: 101 cases were identified though ascertainment was likely incomplete. 58 infants were born at term, of whom 46 had a presumed perinatal stroke (PPNS), 11 had an acute symptomatic stroke, and one stroke was an incidental antenatal finding. 43 infants were born prematurely, of whom 16 had PPNS, 11 had an acute symptomatic stroke, and 16 had an incidental finding of neonatal stroke. The commonest presentation for symptomatic strokes was seizures. The commonest presentation for PPNS was decreased arm and hand use unilaterally or a persistently clenched fist unilaterally. Infants with PPNS were reported to have had symptoms/signs from a median age of 7 months (range 0-27 m). The majority of cases were diagnosed by MRI head (Figure 1). The median delay between first reported symptoms/signs and radiological diagnosis was 8.4 months.

Figure 1:



In 2 patients there was a delay in management of neonatal seizures and in 2 other cases, cranial ultrasound missed strokes which were detected later. Therapist input and language outcomes were particularly poorly documented.

Of the 101 patients identified, 86 developed hemiparesis, 10 had an asymmetrical quadriparesis, 2 had a normal motor outcome and in 3 cases motor outcome was unclear from the notes. The literature suggests 50% of patients with PNS have normal outcomes. Our method of retrospective data collection using ICD10 codes biased our sample towards a group with a high level of pathology.

Conclusion: Recommendations to improve management of perinatal stroke include prompt investigation of neonatal seizures and focal neurology, early definitive imaging and comprehensive documentation.

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